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EXAMINER

CHEVALIER, ALICIA ANN

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/939,265

Applicant(s)

BOLTON ET AL.

Examiner

Alicia Chevalier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 7-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-13 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-6, drawn to a method of making a laminated safety glass, classified in class 156, subclass 60.
 - II. Claims 7-13, drawn to a laminated safety, classified in class 428, subclass 156.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process such as molding.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with John Lezdey on October 7, 2002 a provisional election was made with traverse to prosecute the invention of Group II, claims 7-13. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

6. Claim 13 is objected to because of the following informalities: Claim 6 upon which claim 13 depends, has a typographical error “colpolymer” should be copolymer. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 is unclear in scope, which renders the claim vague and indefinite. It is unclear whether the “laminate having thickness of about 4 to 60 mils” is the entire anti-spalling laminated safety glass of just the laminating film. The thickness is considered to be that of the laminating film since the second glass sheet has a thickness of about 0.5-1.5 mm (20-60 mils). Therefore, since the thickness of the second glass is never less than 20 mils, the total thickness of

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the article could never be as small as 4 mils. Furthermore, that upper range of the thickness reads on the entire thickness of the second glass sheet in certain scenarios.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clock et al. (3,762,988) in view of Hopfe (5,425,977).

Clock discloses a safety glass laminate comprising a first glass layer, an interlayer, and second glass layer (figure 3). The interlayer comprises between about 60 and about 99.5 weight percent of an α -olefin and between about 0.5 and about 25 weight percent an α,β -ethylenically unsaturated carboxylic acid which is partially neutralized with an alkali metal cation such as sodium. Salt forming cations which may be used to neutralize the carboxylic acid groups of the copolymer include polyamines, such as diamines. The α -olefin can be ethylene and the α,β -ethylenically unsaturated carboxylic acid can be either methacrylic or acrylic acid. See column 5, lines 20-65.

The interlayer has a thickness between 4-200 mils and the glass layers have a thickness of at least about 30-300 mils (0.8-7.5 mm) (col. 8, lines 20-50).

Clock fails to disclose the interlayer comprising indentations/grooves/scores.

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Hopfe discloses a laminated safety glass assembly comprising a first layer of glass, an interlayer, and a second layer of glass. The interlayer comprises a multiplicity of microscopic peaks and valleys (indentations/grooves/scores) on its the surfaces (col. 1, line 57 to col. 2, line 14 and figure 1). The interlayer is a thermoplastic interlayer, which may be a copolymer an olefin and an alpha olefin carboxylic acid with a thickness of about 0.25 to 1.5 mm (10-60 mils) (col. 3, lines 16-35).

The surface roughness of the interlayer increases the quality of the pre laminate by providing a remarkably high degree of light transmission there through (col.1, lines 44-56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the multiplicity of microscopic peaks and valleys as taught by Hopfe to the interlayer of Clock because to the improved degree of light transmission gained by the peaks and valleys of Hopfe.

Process limitations are given little or no patentable weight. The method of forming the product is not germane to the issue of patentability of the product itself. Further, when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claim in a product-by-process claim, the burden is on the Applicant to present evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. *In re Brown*, 459 F.2d 531, 173 USPQ 685 (CCPA 1972); *In re Fessman*, 489 F.2d 742, 180 USPQ 324 (CCPA 1974). This burden is NOT discharged solely because the product was derived from a process not known to the prior art. *In re Fessman*, 489 F.2d 742, 180 USPQ 324 (CCPA 1974).

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Furthermore, the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 946, 966 (Fed. Cir. 1985) and MPEP §2113. In this case, the limitations such as “extruded,” “neutralized,” and “applying heat and pressure or vacuum” are methods of production and therefore does not determine the patentability of the product itself.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clock et al. (3,762,988) in view of Hopfe (5,425,977) as applied to claims 7-11 above, and further in view of Smith, Jr. (4,619,973).

Clock and Hopfe discloses all the limitations of the instant claimed invention except for the weight percent of diamine.

Smith discloses an ionomer resin for use as an interlayer in safety glass (col. 1, lines 15-24). The ionomer resin comprises an ionically crosslinked ethylene-methacrylic acid copolymer further crosslinked with a polyamine, such as diamine (col. 4, lines 58-64). The diamines are add in the amount of 0.3% to 10% by weight of the mixture.

When ethylene-methacrylic acid or ethylene-acrylic acid copolymers are heated above the melting point the polymer chain loses most of their crystallinity and the chains, particularly the polyethylene segment, become intertwined. The diamine bonds with the carboxyl group and forms a non-reversible diamine salt at higher temperatures and helps prevent the degrading of the polymer. See column 8, lines 43-59.

It would have been obvious to one of ordinary skill in the art to add diamine in the weight percentage taught by Smith to the interlayer of Clock because the diamine would bond with the carboxyl group and forms a non-reversible diamine salt at higher temperatures and helps prevent the degrading of the polymer.

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clock et al. (3,762,988) in view of Hopfe (5,425,977) as applied to claims 7-12 above, and further in view of Murase et al. (5,445,871).

Clock and Hopfe discloses all the limitations of the instant claimed invention except for the presence of an ultraviolet blocker.

Murase discloses an plastic plate for use in safety glass (col. 2, lines 17-26). The plastic comprises an ethylene-methacrylic acid copolymer (col. 7, lines 1-37). The plastic further comprises a uv absorber in an amount of 10 parts by weight or less, which reads on applicant's claimed weight percent of 0.01 to 2.5%.

It would have been obvious to one of ordinary skill in the art to add a uv absorber in the amount specified as taught by Murase to the interlayer of Clock because the uv absorber would help prevent the transmission of uv light through the laminate.

13. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolton et al. (4,799,346) or Bolton et al. (4,663,228) in view of Clock et al. (3,762,988).

Applicant discloses in the specification on page 3, paragraph 3 that patents 4,799,346 and 4,663,228 disclose laminated safety glass structures which are preferable for use in the present invention. However, the onward layers disclosed in the patent have a thickness which would not provide the anti-spalling characteristics of the present invention.

Clock discloses a safety glass laminate comprising a first glass layer, an interlayer, and second glass layer (figure 3). The interlayer comprises between about 60 and about 99.5 weight percent of an α -olefin and between about 0.5 and about 25 weight percent an α,β -ethylenically unsaturated carboxylic acid which is partially neutralized with an alkali metal cation such as sodium. Salt forming cations which may be used to neutralize the carboxylic acid groups of the copolymer include polyamines, such as diamines. The α -olefin can be ethylene and the α,β -ethylenically unsaturated carboxylic acid can be either methacrylic or acrylic acid. See column 5, lines 20-65. The interlayer has a thickness between 4-200 mils and the glass layers have a thickness of at least about 30-300 mils (0.8-7.5 mm) (col. 8, lines 20-50).

The exact thickness of all the layers is deemed to be a cause effective variable with regard to the anti-spalling properties of the laminate. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as combined thickness of the layers through routine experimentation in the absence of a showing of criticality in the claimed combined thickness. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). One of ordinary skill in the art would have been motivated to optimize the thickness of the layers, as similarly taught by Clock, in order to make the laminate thinner and lighter for use in different types of vehicles or other intended uses for safety glass.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (703) 305-1139.

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The Examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:00 p.m. The Examiner can also be reached on alternate Fridays

If attempts to reach the Examiner are unsuccessful, the Examiner's supervisor, Harold Pyon can be reached by dialing (703) 308-4251. The fax phone number for the organization official non-final papers is (703) 872-9310. The fax number for after final papers is (703) 872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose phone number is (703) 308-0661.

ac

1/25/03

HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

1/27/03